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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,725	09/12/2003	Shatish Shah	ACO6275P1US	8279

7590 09/07/2004
LOUIS A. MORRIS
AKZO NOBEL INC.
7 LIVINGSTONE AVENUE
DOBBS FERRY, NY 10522-3408

EXAMINER

ZACHARIA, RAMSEY E

ART UNIT PAPER NUMBER

1773

DATE MAILED: 09/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/661,725

Applicant(s)

SHAH ET AL.

Examiner

Ramsey Zacharia

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 21-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-20 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/20/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-20, drawn to a coating on a substrate, classified in class 428, subclass 421.
 - II. Claims 21-24, drawn to a method of applying a coating, classified in class 427, subclass 385.5.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by a materially different process such as one that comprises applying a primer composition comprise inorganic inert particles with an average particle size of 10 to less than about 20 micrometers.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Louis A. Morris on 30 August 2004 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-20. Affirmation of this election must be made by applicant in replying to this Office action. Claims 21-24 are

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withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 4-6 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claims 4 and 5 are rendered indefinite because it is unclear if the phrase "said heat resistant adhesion promoter" refers to the heat resistant adhesion promoter in the primer, the topcoat, either primer or topcoat, or both the primer and topcoat.

9. Claim 6 is rendered indefinite because the claim is directed to the "composition of claim 1" while claim 1 is directed to a non-stick coating. This rejection may be overcome by replacing the phrase with -- non-stick coating of claim 1 --. Moreover, "solvents" is listed as a member of the Markush group of permitted "other ingredients" but the weight percentages are based on the solid content of the primer composition.

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10. Claim 16 is rendered indefinite because it is unclear if the composition recited is directed to the topcoat layer or the entire coating. Furthermore, it is unclear if the recited weight percentages are calculated on the basis of the solid content of the entire coating or just one layer of the coating.

Claim Language

11. For the purpose of examination, claim 6 is taken to be directed to the primer composition in the coating of claim 1 and not to the primer composition prior to use in the coating of claim 1. If this claim is rewritten to be directed to the primer composition prior to use in the coating of claim 1 it may be subject to a restriction requirement.

Claim Objections

12. Claim 6 objected to because of the following informalities: a comma (,) is needed after the term "pigments" on line 5 of the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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14. Claims 1, 3-9, 11-15, 17, 18, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Tannenbaum (U.S. Patent 5,562,991) as evidenced by U.S. Patent 5,240,775 and U.S. Patent 5,250,356.

Tannenbaum teaches a primer composition for a non-stick coating on a substrate comprising a polymer binder and 5-30 wt% of inorganic film hardener (column 2, lines 38-44). The substrate may be aluminum (column 2, lines 61-67). The polymer binder may be polyamideimide (column 4, lines 10-12), polyethersulfone (column 4, lines 32-40) or polyphenylene sulfide (column 4, lines 41-47). The inorganic film hardener preferably has a particle size of as high as 20 μm and may be a metal oxide (column 5, lines 26-31). In the embodiment of the Examples, a midcoat (corresponding to the topcoat of the instant claims) and a topcoat (corresponding to the overcoat of the instant claims) were applied over the primer (column 7, lines 45-55). The midcoat used is that disclosed in U.S. Patent 5,240,775 except that a 85:15 wt% blend of PTFE:PFA is used in place of the PTFE and the topcoat used in that disclosed in U.S. Patent 5,250,356 except that a 95:5 wt% blend of PTFE:PFA is used in place of the PTFE. In the example, the primer comprises about 20 wt% of the inorganic film hardener, about 25 wt% of the binder, and about 20 wt% of pigments (see table bridging columns 7 and 8).

The midcoat taught in Table 2 of U.S. Patent 5,240,775 (corresponding to the instant topcoat) comprises PTFE, a fluorocarbon resin, oleic acid, cerium octoate, and an acrylic latex (Table 2). The acrylic latex reads on the heat resistant adhesion polymer in the topcoat composition of instant claim 1 since no degree of heat resistance is required by the claim. The acrylic latex comprises about 19% of the solid content of the composition and the PTFE comprises about 64 wt% of the composition. Since Tannenbaum uses an 85:15 wt% blend of

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PTFE:PFA in place of the PTFE, the resulting midcoat of Tannenbaum will comprise about 10 wt% of PFA, a fluorocarbon resin that is flowable at a temperature above about 300 °C.

The topcoat taught in U.S. Patent 5,250,356 (corresponding to the instant overcoat) comprises 99 wt% polytetrafluoroethylene and 1 wt% of TiO₂ coating mica pigment. A composition comprising 1 wt% of pigment is taken to be essentially free of pigments. Since Tannenbaum uses a 95:5 wt% blend of PTFE:PFA in place of the PTFE, the resulting composition will also comprise PFA, a fluorocarbon resin that is flowable at a temperature above about 300 °C.

Regarding claim 7, the limitations of this claim are taken to be met since the claim does not require the "other ingredients" to be fillers. Rather this claim further limits the fillers while still permitting the other ingredients to be pigments, surfactants, solvents, or defoamers.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tannenbaum (U.S. Patent 5,562,991) as evidenced by U.S. Patent 5,240,775 and U.S. Patent 5,250,356 in view of Tannenbaum (U.S. Patent 5,478,651).

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Tannenbaum ('991) teach all the limitations of claim 19, as outlined above, except for the use of alumina (i.e. aluminum oxide). However, Tannenbaum ('991) do teach that the inorganic film hardener may be titanium dioxide or aluminum silicate.

Tannenbaum ('651) teach that titanium dioxide, aluminum silicate, and aluminum oxide are equivalent inorganic film hardeners (column 4, lines 30-37). Therefore, because these materials were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute aluminum oxide for titanium dioxide or aluminum silicate as an inorganic film hardener.

17. Claims 10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tannenbaum (U.S. Patent 5,562,991) as evidenced by U.S. Patent 5,250,356 in view of Tannenbaum (U.S. Patent 5,240,775) and Concannon (U.S. Patent 4,351,882).

Tannenbaum ('991) teach all the limitations of claims 1-18 and 20, as outlined above, taking the composition of U.S. Patent 5,250,356 with a 95:5 wt% blend of PTFE:PFA used in place of the PTFE for the outermost coating. Tannenbaum ('991) also teaches that the composition taught by Tannenbaum ('775) may be used as the midcoat layer (column 7, lines 47-50).

However, Tannenbaum ('991) do not teach that the midcoat comprises, in addition to the heat resistant adhesion promoter such as polyamideimide, 55-70 wt% of a heat stable fluorocarbon resin dispersion, 3-10 wt% of a fluorocarbon resin that is flowable at a temperature above 300 °C, and 5-15 wt% of an acrylic resin.

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Tannenbaum ('775) teach the equivalence between the his topcoat (the material used as the midcoat in Tannenbaum ('991) and the material disclosed in U.S. Patent 4,351,882 (column 5, line 57-column 6, line 2).

Concannon (U.S. Patent 4,351,882) teach an intermediate coating comprising a solids content of about 34.3 parts PTFE, 6.1 parts PFA, 5.0 parts acrylic resin, and 1.1 parts pigments (Table in column 5). The composition may also comprise 0-15 wt% of a thermally stable polymer (column 2, lines 11-22). The addition of 7 parts (i.e. 15 wt% of 34.3 + 6.1 + 5.0 + 1.1) of thermally stable polymer to the composition disclosed in the Table results in a composition comprising about 64% PTFE, 11% PFA, 9% acrylic resin, and 13% thermally stable polymer.

Regarding the difference between the ~11% PFA in the composition of Concannon and the range recited in claims 10 and 16, a *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985). In this case, it would have been obvious to one skilled in the art to have expected the same properties (e.g. toughness, elasticity, and adhesion properties) for a coating comprising ~11 wt% PFA and a coating comprising 10 wt% PFA, particularly since Concannon teach that the PFA content in the intermediate coat may be as low as 10 wt% (column 3, lines 46-50).

Tannenbaum ('775) shows that the composition of Tannenbaum ('775) and Concannon are equivalent coating composition. Therefore, because these two compositions were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute the coating composition of Concannon for the coating

composition of Tannenbaum ('775) in any application for which Tannenbaum ('775) is suitable including as the midcoat of Tannenbaum (991).

Allowable Subject Matter

18. Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

19. The following is a statement of reasons for the indication of allowable subject matter.

The invention of claim 2 is directed to a non-stick coating on a substrate comprising a topcoat and a primer between the substrate and the topcoat. The topcoat comprises at least one fluorocarbon resin and heat resistant adhesion promoter. The primer comprises at least one heat resistant adhesion promoter, inorganic inert particles having an average particle size of at least about 10 μm and is substantially free of fluorocarbon resin.

Tannenbaum (U.S. Patent 5,562,991) represents the closest prior art. However, Tannenbaum does not teach or fairly suggest a coating as recited in claim 2 because Tannenbaum requires at least 0.5 parts of fluorocarbon polymer per 1 part of heat resistant adhesion promoter in the primer layer.

Conclusion

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramsey Zacharia whose telephone number is (571) 272-1518. The examiner can normally be reached on Monday through Friday from 9 to 5.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones, can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ramsey Zacharia
Primary Examiner
Tech Center 1700